

BEFORE

THE PUBLIC SERVICE COMMISSION OF

SOUTH CAROLINA

DOCKET NO. 2019-184-E

IN RE:)
 South Carolina Energy Freedom Act)
 (H.3659) Proceeding to Establish Dominion)
 Energy South Carolina, Incorporated's)
 Standard Offer, Avoided Cost)
 Methodologies, Form Contract Power)
 Purchase Agreements, Commitment to Sell)
 Forms, and Any Other Terms or Conditions)
 Necessary (Includes Small Power Producers)
 as Defined in 16 United States Code 796, as)
 Amended) - S.C. Code Ann. Section 58-41-)
 20(A))
 _____)

DOMINION ENERGY SOUTH
CAROLINA, INC.'S
PREHEARING BRIEF

Pursuant to Order No. 2019-103-H, dated September 13, 2019, Order No. 2019-108-H, and S.C. Code Ann. Reg. 103-851 (2012), Dominion Energy South Carolina, Inc. ("DESC" or the "Company") herein submits its pre-filed brief to the Public Service Commission of South Carolina ("Commission") in the above-captioned matter.

STATEMENT OF THE CASE

In May 2019, the South Carolina General Assembly enacted 2019 Act No. 62 ("Act No. 62") in which it directed the Commission:

to address all renewable energy issues in a **fair and balanced manner, considering the costs and benefits to all customers** of all programs and tariffs that relate to renewable energy and energy storage, both as part of the utility's power system and as direct investments by customers for their own energy needs and renewable goals. The commission also is directed to ensure that the revenue recovery, cost allocation, and rate design of utilities that it regulates are **just and reasonable** and properly reflect changes in the industry as a whole, the benefits of customer renewable energy, energy efficiency, and demand response, as well as any utility or state specific impacts unique to South Carolina which are brought about by the consequences of this act.

S.C. Code Ann. § 58-41-05 (emphasis added).

Act No. 62 also makes clear that utility customers should not be harmed or otherwise required to pay excessive rates. Specifically, Act No. 62 provides the following mandate to the Commission and parties:

Any decisions by the commission shall be just and reasonable to the rate payers of the electric utility, in the public interest, consistent with PURPA and the Federal Energy Regulatory Commissions' implementing regulations and orders, and nondiscriminatory to small power producers; and shall strive to reduce the risk placed on the using and consuming public.

S.C. Code Ann. § 58-41-20.

In summary, Act No. 62 encourages the development of renewable energy resources, such as solar generation, but in a manner that is “just and reasonable to the ratepayers of the utility” while also striving “to reduce the risk placed on the using and consuming public.”

The General Assembly also made clear that revenue recovery, cost allocation, and rate design of utilities should be just and reasonable. Act No. 62 further establishes procedures to ensure that qualifying facilities (“QFs”) are compensated for the energy they produce at avoided costs rates, as is required by the Public Utility Regulatory Policies Act of 1978 (“PURPA”), while at the same time mandating that costs not be shifted onto utility customers in an effort to subsidize such programs. In this manner, Act No. 62 is designed to ensure that the Company determines its costs and sets its rates at just and reasonable levels to comply with the legislative requirements and to implement the programs required by the act, while also preventing the shifting of costs of solar development to customers.

In compliance with Act No. 62, on May 30, 2019, the Commission established the above-captioned docket for the purpose of establishing DESC’s standard offer, avoided cost methodologies, form contract power purchase agreements (“PPAs”), commitment to sell forms,

and any other terms or conditions necessary to implement the requirements of S.C. Code Ann. § 58-41-20. Timely petitions to intervene were filed by Johnson Development Associates, Inc.; the South Carolina Solar Business Alliance, Inc.; the South Carolina Coastal Conservation League and Southern Alliance for Clean Energy; Walmart, Inc.; the South Carolina Energy Users Committee; and Ecoplexus, Inc. The South Carolina Office of Regulatory Staff also is a party of record pursuant to S.C. Code Ann. § 58-4-10(B).

On June 14, 2019, the Commission held an Advisory Committee Meeting to discuss Act No. 62 and related procedural and scheduling issues. On July 17, 2019, the Commission held a hearing to consider oral arguments regarding procedural scheduling issues in this matter including, among other things, whether to consolidate the issues in this matter with those of Docket Nos. 2019-185-E and 2019-186-E pertaining to Duke Energy Carolinas, LLC and Duke Energy Progress, LLC. In Order No. 2019-524, the Commission concluded that judicial economy would not be served in consolidating these three dockets¹ and established prefiled testimony deadlines and hearing dates for the individual dockets.² The Commission concluded that the proposed schedule would best effectuate the statutory requirements of Act No. 62 and would afford all parties the opportunity to litigate their positions on the matters before the Commission.

On August 12 and 19, 2019, the Commission held two Special Commission Business Meetings, during which the Commission received presentations from and conducted public interviews of prospective third-party consultants and experts to assist the Commission with carrying out its duties in this proceeding, as authorized by S.C. Code Ann. § 58-41-20(I). The

¹ On May 23, 2019, the Commission staff also opened a generic docket, Docket No. 2019-176-E, to establish each electrical utility's standard offer, avoided cost methodologies, form contract PPAs, commitment to sell forms, and any other terms and conditions necessary to implement S.C. Code Ann. § 58-41-20. By way of Order No. 2019-524, the Commission closed Docket No. 2019-176-E.

² See also Notice of Filing and Hearing and Prefile Testimony Deadlines dated July 18, 2019.

Commission also permitted the parties of record to submit proposed written questions concerning each of the proposed candidates. *See* Order No. 2019-557, dated August 7, 2019. By way of Order No. 2019-585, dated August 21, 2019, the Commission also permitted the parties of record to submit comments on the public interviews of the prospective third-party consultants by August 23, 2019. On August 28, 2019, the Commission issued Order No. 2019-621, in which it selected John Dalton of Power Advisory, LLC to serve as the independent third-party consultant to advise the Commission on the issues under consideration in Docket No. 2019-184-E.

On August 23, 2019, and in accordance with the Notice issued by the Commission Staff on July 18, 2019, DESC prefiled the direct testimony and exhibits of its witnesses.³ On September 23, 2019,⁴ the other parties of record likewise prefiled the responsive direct testimony and exhibits of their witnesses. On September 13, 2019, the Hearing Examiner in this matter issued a directive providing that any party wishing to file prehearing briefs shall do so by September 23, 2019. *See* Order No. 2019-103-H. Subsequently, the Hearing Examiner revised this schedule and amended the deadline for prehearing briefs to September 30, 2019. *See* Order No. 2019-108-H. The Hearing Officer also permitted parties to file a second brief or filing on October 8, 2019, in order to respond to the positions raised by other parties, to address any outstanding procedural and evidentiary issues, to provide a brief summary of testimony, and to describe any stipulations reached or identify any issues not in controversy.

³ On September 20, 2019, the Company filed amended versions of the direct testimony of Witnesses James W. Neely, John E. Folsom, Jr., and Allen W. Rooks to correct certain inadvertent errors that were contained in the versions of testimony filed on August 23, 2019.

⁴ On September 17, 2019, the Hearing Officer issued a directive, Order No. 2019-106-H, granting ORS's request for an extension until September 23, 2019, for the other parties of record to prefile responsive direct testimony of their witnesses. Likewise, DESC's time to prefile rebuttal testimony and exhibits was extended to Monday, October 7, 2019.

LEGAL ISSUES PRESENTED

I. REQUIREMENTS OF S.C. CODE ANN. § 58-41-20

Among other things, Act No. 62 requires the Commission to establish “each electrical utility’s standard offer, avoided cost methodologies, form contract power purchase agreements, commitment to sell forms, and any other terms or conditions necessary to implement” the requirements of S.C. Code Ann. § 58-41-20.

A. Standard Offer

A standard offer (the “Standard Offer”) is defined by S.C. Code Ann. § 58-41-10(15) to mean “the avoided cost rates, power purchase agreement,⁵ and terms and conditions approved by the commission and applicable to purchases of energy and capacity by electrical utilities ... from small power producers up to two megawatts AC in size.” Stated differently, a Standard Offer is a power purchase agreement (“PPA”) that contains an avoided cost rate paid to eligible QFs that are 2 MW in size or smaller. Additionally, the Standard Offer contract sets the terms and conditions and allows any qualifying small power producer, as defined by Section 58-41-10(14), to contract with the utility to supply electricity at established rates without the need to negotiate individual contracts. The Standard Offer therefore establishes set prices, terms, and conditions, and is not negotiated by DESC or the eligible QF. It is intended to address the concern that the costs of negotiating and administering individually-negotiated contracts could render smaller projects non-viable. In this manner, Act No. 62 expands the requirements of PURPA, which only requires that utilities have in place standard rates for QFs up to 100 kW-AC, by increasing the upper limit on the required offer of standardized rates, terms, and conditions contained in PURPA from 100 kW-

⁵ “‘Power purchase agreement’ means an agreement between an electrical utility and a small power producer for the purchase and sale of energy, capacity, and ancillary services from the small power producer’s qualifying small power production facility.” S.C. Code Ann. § 58-41-10(9).

AC to 2 MW-AC in size, a 20-fold increase. An increase of this magnitude in the availability of standard offer contracts accentuates the importance of ensuring that their pricing, terms and conditions do not prejudice the interests of customers. Consistent with the express requirements of Act No. 62, the Commission must ensure that the terms of these standard offer contracts do not unintentionally or unexpectedly result in the shifting of costs onto ratepayers, or result in operational issues for the electric utility systems on which customers depend which themselves may be difficult or expensive to resolve.

B. Avoided Cost Methodology

As defined by both PURPA regulations and Act No. 62, “avoided costs” are “the incremental costs to an electric utility of electric energy or capacity or both which, but for the purchase from [QFs], such utility would generate itself or purchase from another source.” 18 C.F.R. § 292.101(b)(6); S.C. Code Ann. § 58-41-10(2). The Federal Energy Regulatory Commission (“FERC”) further recognizes that avoided costs include two components: “energy” and “capacity.” Specifically, “[e]nergy costs are the variable costs associated with the production of electric energy (kilowatt-hours). They represent the cost of fuel, and some operating and maintenance expenses.⁶ Capacity costs are the costs associated with providing the capability to deliver energy; they consist primarily of the capital costs of facilities.” *Small Power Production and Cogeneration Facilities; Regulations Implementing Section 210 of the Public Utility Regulatory Policies Act of 1978*, Order No. 69, 45 Fed. Reg. 12,214, 12,216 (Feb. 25, 1980) (“Order No. 69”). The Commission also has recognized in Order No. 81-214, dated March 20, 1981, Docket No. 80-251-E and in subsequent decisions that electric utilities are entitled to recover from customers their avoided costs paid to QFs under PURPA.

⁶ The Commission also has recognized that energy costs include certain environmental costs which are subject to recovery in fuel rates pursuant to S.C. Code Ann. § 58-27-865.

Importantly, PURPA does not require electric utilities to pay QFs more than their avoided costs. To the contrary, PURPA's and its implementing regulations expressly provide that "[n]othing ... requires any electric utility to pay more than the avoided costs for purchases" from QFs. 18 C.F.R. § 292.304(a)(2). Similarly, by setting a ceiling of incremental cost on the amount a utility should be required to pay for a QF's power, Congress expressed that PURPA is "not intended to require the rate payers of a utility to subsidize cogenerators or small power producers." Joint Conference Committee Report, H.R. Rep. No. 95-1750, at 98, 1978 U.S.C.C.A.N. 7797, 7832. For these reasons, PURPA is intended to equalize the rates charged for utility power plant additions and utility purchases of QF power so as to make certain that customers do not pay more for electricity under either option.

In like manner, Act No. 62 does not provide or allow the Commission to provide benefits or incentives for solar generating facilities, beyond the payment of the utility's avoided cost as objectively established. To the contrary, S.C. Code Ann. § 58-41-20(A) provides that "[a]ny decisions by the commission shall be just and reasonable to the ratepayers of the electrical utility ... and shall strive to reduce the risk placed on the using and consuming public." Thus, if a utility's avoided costs are calculated reasonably to reflect the utility's avoided costs, customers would not be impacted by purchases of QF power, and would be economically indifferent to whether the power in question was supplied by the QF purchase or by other means. Under both PURPA and Act No. 62, utilities are only required to pay QFs the utility's avoided costs, and nothing more. To do otherwise would be in direct contravention of the requirements set forth in S.C. Code Ann. § 58-41-20(A) because it would require customers to improperly subsidize these privately held QF projects, including privately owned solar generating facilities.

In considering the avoided cost methodologies to be approved in this proceeding, S.C. Code Ann. § 58-41-20(B) requires the Commission to “treat small power producers on a fair and equal footing with electrical utility owned resources by ensuring that:

- (1) rates for the purchase of energy and capacity fully and accurately reflect the electrical utility’s avoided costs; ... and
- (3) each electrical utility’s avoided cost methodology fairly accounts for costs avoided by the electrical utility or incurred by the electrical utility, including, but not limited to, energy, capacity, and ancillary services provided by or consumed by small power producers including those utilizing energy storage equipment. Avoided cost methodologies approved by the commission may account for differences in costs avoided based on the geographic location and resource type of a small power producer’s qualifying small power production facility.”

In its prefiled testimony and other filings made in this proceeding, the Company has carefully determined its avoided costs and the methodology for calculating them so that customers are not required to subsidize QFs through the payment of excessive rates and, instead, are economically indifferent to purchases of QF power, as is intended by PURPA and Act No. 62. In making these calculations, the Company has taken into consideration the nature and operating characteristics of solar QFs, which comprise the vast majority of renewable energy small power producers that are the focus of Act No. 62. DESC has carefully evaluated how these characteristics influence the costs which are avoided when solar QFs add generation to DESC’s system and those which are not. Apart from safety, there is no more important obligation for DESC and its operating personnel than ensuring the reliability of its service to customers. Based on its operating experience and knowledge of how operating standards must be applied, DESC has carefully evaluated the contribution that solar QFs make to its system and the terms and conditions that are required in its standard offer contract to protect customers.

C. Form Contract PPA

A form contract PPA is similar to a Standard Offer, except that, pursuant to S.C. Code Ann. § 58-41-20(A), it is for use for qualifying small power production facilities that are not eligible for the Standard Offer, i.e., QF facilities that are greater than 2 MW in size. The statute also requires that these PPAs contain provisions for force majeure, indemnification, choice of venue, confidentiality provisions, and other such terms. However, the PPA is not determinative of the price or duration of the contract. These issues are to be separately negotiated by the Company and the applicable QF. As proposed by DESC, the terms and conditions for the Standard Offer and the form PPA are similar since the potential impacts to the Company's system and its customers from projects 2 MW or less in size can be comparable to those that exceed 2 MW.

D. Commitment to Sell Form

Act No. 62 also mandates that QFs "have the right to sell the output of its facility to the electrical utility at the avoided cost rates and pursuant to the power purchase agreement then in effect by delivering an executed notice of commitment to sell form to the electrical utility." S.C. Code Ann. § 58-41-20(D). This standard notice of commitment to sell form ("NOC Form") is required to provide the QF a reasonable period of time from its submittal of the form to execute a PPA but shall not require a QF, "as a condition of preserving the pricing and terms and conditions established by its submittal of an executed [NOC Form] to the electrical utility, ... to execute a [PPA] prior to receipt of a final interconnection agreement from the electrical utility." *Id.*

II. Issues Related to Bifurcation of Docket No. 2019-2-E

In addition to the issues required to be addressed in this proceeding under S.C. Code Ann. § 58-41-20, it also is appropriate and necessary for the Commission to address certain issues that previously were presented for consideration in the Company's 2019 fuel cost proceeding, Docket

No. 2019-2-E, but ultimately bifurcated from the decisions reached in that matter. Specifically, prior to the enactment of Act No. 62, DESC's avoided costs and underlying methodologies were approved in the Company's annual fuel cost proceeding as provided by S.C. Code Ann. § 58-27-865. As part of the Company's 2019 fuel cost proceeding, DESC proposed to include the updated avoided costs, variable integration costs, and updates to the Net Energy Metering ("NEM") values in its fuel costs effective with the first billing cycle of May 2019. However, the Commission determined that these issues should be bifurcated from consideration in Docket No. 2019-2-E and would be addressed in a later, appropriate hearing. Order No. 2019-229 at 1; Order No. 2019-43-H at 1. The Commission also determined that DESC's then-current avoided cost rates and NEM values were to remain the same as those in effect at the time the issues were bifurcated and that, after the Commission held a hearing to consider updates to these rates, these rates and values would be subject to a "true up." Order No. 2019-43-H at 1. Accordingly, these issues are appropriate for consideration in the above-captioned docket.

DESC WITNESSES AND SUMMARY OF TESTIMONY

In connection with this proceeding, DESC has prefiled the direct testimony of seven (7) witnesses: 1) John H. Raftery; 2) Eric H. Bell, P.E.; 3) Matthew W. Tanner, Ph.D.; 4) Joseph M. Lynch, Ph.D.; 5) James W. Neely, P.E.; 6) John E. Folsom, Jr.; and 7) Allen W. Rooks.

I. John H. Raftery

The prefiled direct testimony of Company Witness Raftery provides the Commission with background information regarding Act No. 62, including the public policy issues that formed the basis for its enactment, the requirements of S.C. Code Ann. § 58-41-20 under consideration in this proceeding and to support DESC's requests regarding these issues. As explained by Mr. Raftery, Act No. 62 was enacted to encourage the development of renewable energy resources in a manner

that is fair and balanced to all customers of all programs related to renewable energy and energy storage. He also explains that the Act establishes procedures to ensure that independent power producers are properly compensated for the energy they produce while at the same time mandating that costs not be shifted onto utility customers in an effort to subsidize such programs. Instead, Mr. Raftery explains the importance of accurately calculating avoided costs that are paid to QFs so that customers are not adversely impacted by, and will be economically indifferent to, these power purchases instead of the Company incurring costs to generate energy using its current generation fleet or to construct and operate additions to utility power plant.

Regarding avoided costs, Mr. Raftery's testimony provides background information concerning PURPA, its requirements, and the impact avoided costs have on customers. Among other things, Mr. Raftery discusses that PURPA and Act No. 62 make clear electric utilities are only required to pay QFs the utility's avoided costs and nothing more because to do otherwise would require customers to improperly subsidize these privately held solar projects. In this regard, Mr. Raftery also discusses the significant increase in solar generation interconnections DESC has recently experienced and notes that, as more solar QF facilities are interconnected, the more difficult it becomes for the Company to integrate the power supplied, which creates additional operational costs. Mr. Raftery also provides several examples of operational problems DESC has experienced due to power supplied by solar generating facilities, as well as the impact these solar generation issues have on DESC's avoided costs.

Mr. Raftery also provides general information concerning the Company's proposed standard offer, proposed form contract PPA, and Notice of Commitment to Sell form. Finally, Mr. Raftery discusses the Commission's decision in the 2019 Fuel Docket to bifurcate from that proceeding avoided costs, variable integration costs, and updates to the values included in the

NEM methodology, including the Company's proposal to "true up" these values in connection with this proceeding by calculating the difference between those costs and values and separately account for them as incremental costs. Mr. Raftery further explains that the Company would adjust its fuel costs as part of its 2020 annual fuel cost review proceeding (Docket No. 2020-2-E) to account for these incremental costs. By doing so, the contemplated "true up" will not require a mid-period adjustment to fuel costs.

II. Eric H. Bell, P.E.

Company Witness Eric Bell's direct testimony addresses the actual operational experience of the Company related to managing energy supply, including the solar generation facilities interconnected with DESC's system. In addition, he discusses the reference data and other inputs the Company provided to Navigant Consulting, Inc. ("Navigant") with regard to the PV solar generation facility impact study and the Company's review of Navigant simulations.

More specifically, Mr. Bell discusses the factors, including time of day and weather conditions, that influence the amount of energy that solar generation facilities produce. These factors are uncontrollable, meaning that the electricity produced by solar generation is independent of customer demand or decisions by the system dispatcher. The amount of generation provided by solar QFs can vary dramatically day by day, and at times during a given day, hour by hour, or minute by minute, as climatological conditions change. These changes are uncontrollable and often impossible to accurately predict. They require that other generation or supply assets be available on the system that can respond to the fluctuations in solar generation to ensure that customers receive reliable service. Further, Mr. Bell discusses the Company's recent significant increase in PV generator proposed interconnections and testifies that, by the end of 2020, DESC expects to have 1,152 MW of solar facilities connected with its system. Mr. Bell explains that this amount of

solar generation creates challenges in safely and reliably operating DESC's system in compliance with regulatory requirements. Further, Mr. Bell testifies that DESC must maintain sufficient operating reserve generation capability in order to meet system reliability requirements, and solar generation at these levels requires DESC either to maintain more hourly operating reserves or add more quick start resources to its system.

In addition, Mr. Bell discusses that, because forecasted weather conditions may vary greatly, projections of anticipated solar generation are much less reliable than other generating resources. Accordingly, Mr. Bell explains the utility must be ready for the unexpected loss of solar generation before the loss occurs, while also complying with its reserve requirements established by the North American Electric Reliability Corporation, the SERC Reliability Corporation, and the VACAR (Virginia/Carolinas) Reserve Sharing Arrangement. In this regard, Mr. Bell discusses how the Company maintains available reserve capacity and provides information regarding the operational and financial impact of costs associated with serving DESC's customers with solar generation in addition to the Company-owned resources.

III. Matthew W. Tanner, Ph.D.

Dr. Tanner presents the findings and conclusions of the "Cost of Variable Integration Study" Navigant prepared on behalf of DESC. The scope and purpose of the study was to estimate the impacts that solar installations will have on DESC's system operations. It also establishes the resulting incremental integration costs for projects that are already under contract and have a variable integration charge clause in their PPA. The study describes how the additional reserve requirements for DESC that are caused by solar will result in additional fuel costs. This is true because increasing reserve requirements requires system dispatchers to hold units off line (in whole or in part) that in certain cases would otherwise be able to meet customer demand with

greater fuel efficiency than the remaining alternatives. These additional fuel costs are properly incorporated into the avoided cost methodology going forward.

Certain DESC PPAs recognized that such variable integration costs could be quantified in the future, and provided that DESC could charge those costs when so quantified. The study quantifies the variable integration charge to apply to those PPAs. Mr. Tanner testifies that going forward, the additional fuel costs resulting from the operating characteristics of solar generation are properly reflected in the base avoided cost calculation and not in a separate calculation.

Dr. Tanner testifies that, in performing the study, Navigant established a benchmark that reflected DESC's actual system operating experience and the Company's own internal planning. Navigant then conducted a solar uncertainty analysis to determine the amount of operating reserves that must be maintained by the Company in order to ensure that DESC can reliably respond and meet system needs if actual generation is less than forecasted. Dr. Tanner also explains that the analysis considered the challenges the Company would experience if additional reserves are not added to the system and evaluated alternative approaches to providing the necessary reserves, including an analysis of the potential and cost to add new resources to the system as an alternative mitigation option.

Dr. Tanner also testifies that the amount of solar energy that can be generated by a QF is dependent on the weather and, therefore, there is inherent variability in how much electricity may actually be generated by solar generating facilities. He further explained that DESC operators must closely match generation and load at all times to operate a safe and reliable electric system, and therefore must maintain sufficient operating reserves by keeping generators online but operating at less than their full capacity or by maintaining quick-start generating resources. Dr. Tanner

discusses how maintaining these additional operating reserves increases the Company's operational costs.

The Navigant study concluded that, because solar generation is a variable resource, it adds uncertainty to the generation needed from the rest of the system and that DESC must maintain additional operating reserves to ensure that load and current reserve obligations are met. Dr. Tanner also explains that the levelized cost of maintaining additional operating reserves for the tranche of roughly 700 MW of solar generation that have variable integration charge clauses in their PPAs is \$4.14/MWh. Dr. Tanner testifies that building additional resources such as battery storage or quick-start gas combustion turbines solely to provide reserves will not reduce costs to DESC due to the additional capital cost currently required for these facilities. However, Dr. Tanner also explains that, with the installation of co-located batteries or changing operations to be more flexible, as long as certain requirements are met, solar projects can be added to the system that do not increase reserve requirements.

IV. Joseph M. Lynch, Ph.D.

In his direct testimony, Dr. Lynch presents the various analyses used in developing the resource plan which was necessary to calculate DESC's avoided costs. In particular, Dr. Lynch explains four distinct analyses: 1) the impact of solar power on the need for capacity; 2) DESC's peak demand forecast; 3) DESC's reserve margin policy; and 4) a Loss of Load Expectation ("LOLE") study.

In discussing his solar capacity benefit study, Dr. Lynch testifies that solar power cannot help to serve the system's winter peaking needs because the system typically peaks early in the morning before sunrise. Further, Dr. Lynch explains that, as the amount of solar capacity increases, each increment of solar capacity affects the peak on fewer days because, as more and more solar

capacity is added to the system, the time of the system peak net of the solar output is shifted later and later in the day until it reaches sunset, after which time adding more solar capacity no longer affects the summer peak. Dr. Lynch also discusses the Effective Load Carrying Capacity (“ELCC”) methodology and concludes that the incremental value of solar decreases as more is added even when value is measured by the ELCC. However, Dr. Lynch explains that DESC needs capacity in the winter and solar provides no capacity on early winter mornings before sunrise. Dr. Lynch also testifies that more recent solar data validate DESC’s conclusions that solar cannot help to serve winter peak and therefore has zero capacity value.

Regarding DESC’s peak demand forecast study, Dr. Lynch testifies that DESC expects its winter peak demand to be higher than its summer peak demand over the 15-year planning horizon under normal weather conditions. He explains that the prominence of the winter peak demand relative to the summer peak demand is a consequence of changes in customer usage patterns resulting from energy efficiency and conservation having different seasonal impacts.

Dr. Lynch further discusses DESC’s reserve margin policy and explains that, in studying the Company’s reserve margin needs, DESC conducted additional analyses to establish the winter and summer peak demand risk related to extreme weather. He testifies that the results of these analyses support the continued use of a 14% minimum reserve margin in the summer and 21% in the winter. Dr. Lynch also presents a formal LOLE study, the results of which suggest that the DESC system requires a reserve margin between a low value of 14.8% and a high value of 21.3% with an average median value of 17.7%. Although Dr. Lynch explains that DESC’s base reserve margin falls below the LOLE value of 17.7% and therefore is more risky, he testifies the Company believes that its additional peak reserve resources will mitigate some of that added risk.

V. James W. Neely, P.E.

In his direct testimony, Mr. Neely discusses the resource plan study that describes the various generation planning scenarios analyzed and presents the resource plan on which avoided energy costs are based. Specifically, Mr. Neely testifies that his department performed a resource study that evaluated nineteen resource plans under four different sets of assumptions. He states that this study determined the current resource plan set forth in the Company's Integrated Resource Plan, which was filed with the Commission on February 8, 2019.

Mr. Neely also discusses and presents DESC's avoided costs for power purchases under PURPA, the long-run avoided costs for solar QFs that have production capacity up to 2 MW, the long-run avoided costs for solar QFs with storage, the short-run avoided costs for QFs that have production capacity of 100 kW or less, and the 11 components contained in the NEM methodology. Mr. Neely explains that DESC uses a Difference in Revenue Requirements ("DRR") methodology to calculate both the energy component and the capacity component of its avoided costs and that this methodology follows directly from PURPA's definition of avoided costs in that it involves calculating the revenue requirements between a base case and a change case.

Mr. Neely also discusses that DESC incurs additional fuel costs when it relies on the energy supplied by solar generators due to the variable nature of the supply and the additional operating reserves required to respond to that variability. Although DESC is allowed to recover costs associated with the variable nature of solar, Mr. Neely testifies that these costs were not captured in avoided cost calculations previously filed with the Commission, and that DESC intends to recover these costs from solar generators whose PPAs include a provision allowing recovery of such variable integration costs. Mr. Neely further describes the method in which DESC calculates its avoided energy costs for QF facilities utilizing the Company's standard offer rate, as well as

the calculations to determine its avoided capacity costs for QF facilities under PPAs going forward. Going forward, the additional fuel costs associated with solar resources and the increased reserve margins required respond to their variability will be reflected in the base calculation of avoided costs, as was done in setting the avoid cost rate for the standard offer contract here. Further, he explains the avoided capacity costs for the standard offer rate for both solar and non-solar QFs.

Mr. Neely also explains that additional solar capacity does not affect DESC's future capacity needs because DESC's need for capacity is driven by the winter season. Because solar does not consistently provide capacity during the winter peak periods, the Company—as a matter of fact and not speculation—is unable to avoid any of its projected future capacity needs and, therefore, the avoided capacity cost of solar is zero. Further, Mr. Neely's testimony sets forth DESC's avoided costs for the standard offer rate. For QFs with greater than 2 MW for which the PR-1 Rate and Standard Offer Rate are not appropriate, Mr. Neely also testifies that DESC plans to negotiate contracts with the methodology being consistent with the avoided cost methodology. Although DESC is not providing a tariff for solar with storage, Mr. Neely states that the Company has calculated avoided costs for solar with storage, which includes both the energy benefit and the capacity benefit. Mr. Neely's testimony also sets forth the requirements to provide solar with storage and to be eligible to receive the associated avoided costs.

Finally, Mr. Neely reviews the 11 components of value for avoided energy and capacity costs for NEM purposes, specifically including the components of value for ancillary services, transmission and distribution capacity, avoided criteria pollutants, avoided CO₂ pollutants, fuel hedge, utility integration and interconnection costs, utility administration costs, environmental costs, and energy losses/line losses.

VI. John E. Folsom, Jr.

Mr. Folsom testifies on behalf of DESC to address the Company's proposed form PPA, standard offer, and notice of commitment to sell form, all of which were developed pursuant to Act. No. 62. Mr. Folsom first provides background information regarding the differences between purchasing power in the market and purchasing from a QF under PURPA. Mr. Folsom further explains the concept of a QF injecting power at points of interconnection where DESC would not otherwise choose to inject power, due to the obligations under PURPA. He also discusses various aspects of PURPA, including its mandatory purchase obligation clause, DESC's experience with making PURPA purchases, and the challenges and opportunities for South Carolina related to PURPA purchases.

Mr. Folsom next addresses the Company's proposed form PPA and explains that it is largely consistent with DESC's existing form which has been executed by solar developers, reviewed by the Commission, and accepted by lenders and investors for project finance purposes. Mr. Folsom also discusses the various modifications that were made to the existing form so as to tailor the form PPA to the requirements of Act No. 62. Mr. Folsom further explains that there are fully executed PPAs, totaling approximately 700 MW of solar production capacity, where system costs associated with variable resources are not reflected in the avoided cost rates. However, Mr. Folsom explains that these PPAs contain a provision to recover the variable integration costs associated with solar energy, that DESC has been able to quantify these costs, and that the Company will collect these costs from these solar QFs on a prospective basis. Further, Mr. Folsom addresses the risk of locking-in long-term PPAs that may be less economical as the term progresses because it does not reflect future improvements in technology and opines that South Carolina should establish rules that adequately protect utility customers and allow the state to benefit from

the best products being developed today while allowing for the technology advancements of tomorrow.

Mr. Folsom also explains that the standard offer is a PPA for QFs up to 2 MW in size that includes standard price, terms, and conditions and is not negotiated between the QF and the utility so as to avoid the costs of negotiating and administering the contract that could make such projects non-viable. Although Mr. Folsom testifies that the standard offer is similar to the form PPA, he also describes the differences between the two forms and explains certain additional protections that were added to the standard offer so as to prevent solar developers from manipulating their projects to abuse the standard offer process.

Mr. Folsom also discusses “legally enforceable obligations,” or “LEOs” under PURPA, which provide a QF with the ability to proceed forward with development when a utility refuses to negotiate a PPA. He further explains that the notice of commitment to sell form is similar to a LEO in that it allows QFs that are substantially committed to producing and delivering power to unilaterally lock in a price and certain terms. Mr. Folsom testifies that, in developing the notice of commitment to sell form, DESC largely drew upon LEO concepts in place in other states, as well as DESC’s institutional knowledge accumulated from experience. He further explains that the proposed form addresses issues such as site control, delivery periods, and delivery deadlines as these provisions evidence substantial commitment and are important to prevent a developer from gaming the system by locking-in rates and commitments by DESC for a speculative project (i.e., a project with little chance of actually being built), which can be detrimental to ratepayers and the solar industry as a whole.

VII. Allen W. Rooks

The purpose of Allen Rooks's direct testimony is to provide and discuss the Company's proposed updates to its PR-1 rate schedule for QFs that have power production capacity less than or equal to 100 kW. He also addresses DESC's proposed updates to its NEM Rider, the rate schedule setting forth DESC's proposed methodology for determining avoided costs for PPAs with QFs under PURPA and Act No. 62, and the rate schedule setting forth DESC's proposed Standard Offer for small power producers with a facility rating up to 2 MW AC in size. Mr. Rooks further testifies regarding the Company's rate schedule setting forth DESC's proposed form contract PPA for QFs with a facility rating above 2 MW and the Company's proposal to withdraw and terminate its rate schedule entitled "Rate PR-2 Small Power Production, Cogeneration." Finally, Mr. Rooks discusses DESC's proposals to address the issues bifurcated from the Company's fuel cost proceeding in Docket No. 2019-2-E, including issues pertaining to avoided costs, variable integration costs, and updates to the values included in the NEM methodology.

CONCLUSION

As more fully described in the pre-filed direct testimony of its witnesses, DESC asserts that its proposed Standard Offer, avoided cost methodology, form contract PPA, and NOC Form fully comply with the requirements of S.C. Code Ann. § 58-41-20 and satisfy the goals of Act No. 62. The Company further asserts that its proposal regarding the treatment of those issues which were bifurcated from consideration in Docket No. 2019-2-E provide a reasonable and appropriate method by which to account for and "true up" the necessary adjustments that were contemplated by the Commission in that proceeding.

DESC therefore respectfully requests that the Commission approve the Company's proposed Standard Offer, form contract PPA, Notice of Commitment to Sell form, the other terms

and conditions proposed by DESC, and the Company's proposed methodology to calculate avoided costs. DESC also requests that the Commission find the Company's proposals to be consistent with the requirements of Act No. 62, fair and reasonable and in the public interest, and to properly reflect the Company's avoided costs so that customers are not burdened with subsidizing developers of solar generators. Finally, the Company requests that it be authorized to separately account as an incremental cost the differences in its NEM values, which were stayed pursuant to Order No. 2019-274, and to be allowed to seek an appropriate adjustment for the differences in these costs and values in its 2020-2-E annual fuel cost review proceeding.

In its second brief as permitted by Order No. 2019-108-H, DESC reserves the right to provide further analysis of the law applicable to this case and to address the substance of the testimony and recommendations filed on September 23, 2019 by other parties, and to provide information as the Company believes would be appropriate and consistent with the Hearing Officer's order.

[SIGNATURE PAGE FOLLOWS]

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Columbia, South Carolina
September 30, 2019